

Claims

What is claimed is:

[c1] A method for applying hardfacing to a shirttail portion of a roller cone drill bit, comprising:

masking around the shirttail portion;

operating a high pressure/high velocity oxygen fuel torch to apply the hardfacing to the shirttail portion.

[c2] The method as defined in claim 1 wherein the operating is performed so as to limit a temperature of the shirttail portion to approximately 75 degrees Celsius.

[c3] The method as defined in claim 1 wherein the hardfacing comprises tungsten carbide.

[c4] The method as defined in claim 1 wherein the hardfacing has a thickness after the operating of about 0.1 to 0.6 mm.

[c5] The method as defined in claim 1 wherein the hardfacing has a thickness after the operating of about 0.25 to 0.28 mm.

[c6] The method as defined in claim 1 wherein the roller cone drill bit comprises three shirttail portions, the method further comprising:

operating the torch approximately ten to twelve times to apply the hardfacing to a first one of the roller cones;

repeating the operating the torch to apply hardfacing to a second one of the roller cones;

repeating the operating the torch to apply hardfacing to a third one of the roller cones, the operating ten to twelve times, repeating for the second cone and repeating for the third cone forming a cycle; and

repeating the cycle at least two additional times.

[c7] The method as defined in claim 1 wherein the hardfacing is applied after to assembly of roller cones to a bit body.

[c8] A roller cone drill bit, comprising:

a bit body adapted to be coupled to a drill string, the bit body including at least one leg depending therefrom, the leg having a bearing journal thereon, the leg defining a shirrtail portion at an end thereof;

a roller cone having cutting elements thereon and rotatably affixed to the at least one bearing journal; and

a hardface coating applied to the shirrtail portion, the hardface coating applied by a high pressure/high velocity oxygen fuel torch.

[c9] The roller cone drill bit as defined in claim 8 wherein the hardface coating comprises tungsten carbide.

[c10] The method as defined in claim 8 wherein the hardfacing has a thickness after the operating of about 0.1 to 0.6 mm.

[c11] The roller cone drill bit as defined in claim 8 wherein a thickness of the hardface coating is approximately 0.25 to 0.28 mm.

[c12] The roller cone drill bit as defined in claim 8 wherein the hardface coating is applied to a segment of the shirrtail portion bounded at one end by a shirrtail tip and at the

other end by a line passing through a center of the bearing journal and perpendicular to a longitudinal axis of the bit body.

[c13] The method as defined in claim 8 wherein the hardfacing is applied after to assembly of at least one roller cone to the bit body.